

CLAIMS.

The invention claimed is:

Claims 1) to 20) (Canceled)

21) (New) The method of extinguishing a fire by the flames containment and suppression process herein described, which comprises the steps of:

A) Compressing, a continuous mass flow of ambient or atmospheric air (a gas mixture of dry air and superheated water vapor) in the fire location.

B) Receiving, an external fire-fight agent (liquid, foam, powder, granular, gaseous) which is delivered to the fire location.

C) Storing, an external fire-fight agent (liquid, foam, powder, granular, gaseous) in the fire location.

D) Supplying, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor) to the flames site.

E) Supplying, a continuous mass flow of an external fire-fight agent (liquid, foam, powder, granular, gaseous) to the flames site.

F) Expanding, in a jacketed or thermally insulated flow passage, a continuous mass flow of compressed ambient or atmospheric air (a

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gas mixture of dry air and superheated water vapor), increasing the flow velocity, and thereby, generating a high flame-front penetration and blast capability, flames-suppression air jet, which is directed to the flames site disrupting said flames natural aerodynamics and blasting their origin; bringing about such flames blown off and combustion process extinction.

G) Expanding, in a horizontal or angled flow passage or passages, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor), increasing the flow velocity, and thereby, generating a directional flame-containment air jet or jets, which are directed to the flames site, constraining runaway flames fronts from escaping, and preventing non burning surrounding materials inflammation.

H) Expanding, in a outer (jacket) flow passage, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor), increasing the flow velocity, and thereby, establishing a heat shield or thermal insulation air mass flow, which discharge air jet is directed to the flames site, preventing thereat, the heat transfer from the high temperature surrounding flames environment to the expanding continuous flow of ambient air in said jacketed flow passage and to the flames-suppression air jet.

I) Expanding, in a jacketed or thermally insulated flow passage, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor), increasing the flow velocity, preventing the heat transfer from the high temperature

surrounding flames environment, decreasing the flow temperature, and thereby, establishing a condensation shock wave, which produces (liquid) water droplets from the superheated water vapor contents in said continuous compressed ambient air mass flow, generating thereat, a flames-suppression air jet with water droplets, which are directed to the flames site, wetting and cooling the inflammable materials, provoking further combustion inhibition.

J) Feeding, in a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor) expanding in a jacketed or thermally insulated flow passage, a continuous flow of an external liquid or foam fire-fight agent, stored in a tank in the fire location and transported to the flames site by means of a air pressurized tank discharge, and thereby, establishing its aspersion on the flames by means of said continuous mass flow of compressed ambient air, generating thereat, a flames-suppression air jet with an external liquid or foam fire-fight agent, which are directed to the flames site, extinguishing such flames.

K) Feeding, in a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor) expanding in a jacketed or thermally insulated flow passage, a continuous flow of an external solid fire-fight agent (powder or granular), stored in the fire location in a silo and transported to the flames site by means of a pneumatic conveyor discharge, and thereby, establishing its aspersion on the flames by means of said continuous mass flow of compressed ambient air, generating thereat, a flames-

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suppression air jet with an external solid (powder or granular) fire-fight agent, which are directed to the flames site, extinguishing such flames.

L) Feeding, in a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor) expanding in a jacketed or thermally insulated flow passage, a continuous flow of an external gaseous fire-fight agent, stored in the fire location in a tank and transported to the flames site by means of a dry air or gaseous agent pressurized tank discharge, and thereby, establishing its aspersion on the flames by means of said continuous mass flow of compressed ambient air, generating thereat, a flames-suppression air jet with an external gaseous fire-fight agent, which are directed to the flames site, extinguishing such flames.

M) Providing, a compressor unit (2), a power drive (3a), a hook keeper (3b), a compressed air exhaust manifold (4), a compressed air hose (5a), a control manipulator pipe (6a), extension pipes (6b), a handle (7a), a handle (7b), suspenders (7c), a air throttle valve (8a), and, a rotary elbow (10a), to supply, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor) to the flames site.

N) Providing, a external fire-fight agent supply valve (3d), to receive, an external fire-fight agent (liquid, foam, powder, granular, gaseous) delivered to the fire location.

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O) Providing, a external (liquid or foam) fire-fight agent tank (32), to store, in the fire location, a delivered liquid or foam external fire-fight agent.

P) Providing, a external solid (powder or granular) fire-fight agent silo (34), to store, in the fire location, a delivered solid (powder or granular) external fire-fight agent.

Q) Providing, a external gaseous fire-fight agent tank (36), to store, in the fire location, a delivered gaseous external fire-fight agent.

R) Providing, a tank pressurization air pressure line (3c), and a liquid or foam external fire-fight agent manifold (33), to transport, a continuous mass flow of an liquid or foam external fire-fight agent (1c) from the fire location to the flames site.

S) Providing, a solids-fluidization air pressure line (3c), and a solid (powder or granular) external fire-fight agent manifold (35), to transport, a continuous mass flow of an solid (powder or granular) external fire-fight agent (1d) from the fire location to the flames site.

T) Providing, a tank pressurization dry air pressure line (3c), a gaseous external fire-fight agent manifold (37), a dehumidifier (38), and a bypass valve (39), to transport, a continuous mass flow of an gaseous external fire-fight agent (1e) from the fire location to the flames site.

U) Providing, a external fire-fight agent hose (5b), a external fire-fight agent control valve (8b), and a external fire-fight agent appended pipe

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line (6c), to supply, an external fire-fight agent (liquid, foam, powder, granular, gaseous) continuous mass flow to the flames site.

V) Providing, a distribution manifold (11a), to install, the flow passages and parts of a "blast-gun", where into, continuous mass flows of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor), are distributed and expanded.

W) Providing, a outer convergent-divergent nozzle (12), supports or struts (28), and a jacketed convergent-divergent nozzle (22), to expand, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor) generating a flames-suppression air jet with water droplets (14a), and, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor) generating a thermal-insulation air flow and discharge air jet (25).

X) Providing, a outer straight duct (29), supports or struts (28), and a jacketed convergent-divergent nozzle (22), to expand, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor) generating a flames-suppression air jet with water droplets (14a), and, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor) generating a thermal-insulation air flow and discharge air jet (25).

Y) Providing, a injector pipe (6d), to feed, a continuous mass flow of an external fire-fight agent (liquid, foam, powder, granular, gaseous) in a

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continuous mass flow of expanding compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor), generating, a flames-suppression air jet with an fire-fight agent, accomplishing its aspersion.

Z) Providing, two horizontal ducts or pipes (11b), two vertical ducts or pipes (11c), and two directional convergent nozzles (13a), to expand, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor), generating, two flame-containment air jets (27a).

AA) Providing, four horizontal ducts or pipes (11b), four vertical ducts or pipes (11c), and four directional convergent nozzles (13a), to expand, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor), generating, four flame-containment air jets (27a).

BB) Providing, a inner vertical cylinder (11d), a outer vertical cylinder (11e), two closing ends (11f), a radial duct and flange (11g), and a circumferential directional convergent nozzle (13b), to expand, a continuous mass flow of compressed ambient or atmospheric air (a gas mixture of dry air and superheated water vapor), generating, a radial discharge flame-containment air jet (27b).

CC) Providing, a solid "skirt" containment (30), to provoke, the existence of air recirculation vertical flows (31), generating, an enhanced forced vertical-flow flames blown off action.

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DD) Providing, a pneumatic control (9), a support (16), a wheel (17a), a vertical rotation attachment (17b), a pneumatic cylinder (18a), and, a connection point (18b), to direct, a flames-suppression air jet, water droplets, flame-containment air jets, a thermal-insulation discharge air jet, and an external fire-fight agent (liquid, foam, powder, granular, gaseous), to the flames site, performing efficiently the fire fight work activities to extinguishing such flames.

EE) Providing, a elbow accessory (10b), a pole support (19), a pivoted anchor (20), a double-action pivoted anchor (21a), a ratchet wheel pivot (21b), a release pedal (21c), a platform (21d), and, a vertical rotation attachment (21e), to direct, a flames-suppression air jet, water droplets, flame-containment air jets, a thermal-insulation discharge air jet, and an external fire-fight agent (liquid, foam, powder, granular, gaseous), to the flames site, performing efficiently the fire fight work activities to extinguishing such flames.
